Search Results - Record(s) 1 through 40 of 40 returned.

☐ 1. Document ID: US 6586572 B2

L15: Entry 1 of 40 File: USPT Jul 1, 2003

US-PAT-NO: 6586572
DOCUMENT-IDENTIFIER: US 6586572 B2

TITLE: Compositions and methods for the therapy and diagnosis of breast cancer

DATE-ISSUED: July 1, 2003

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Jiang; Yuqiu	Kent	WA		
Dillon; Davin C.	Issaquah	WA		
Mitcham; Jennifer L.	Redmond	WA		
Xu; Jiangchun	Bellevue	WA		
Harlocker; Susan L.	Seattle	WA		
Hepler; William T.	Seattle	WA		

US-CL-CURRENT: 530/350; 530/387.3

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | Claims | KWIC | Draw Desc | Image

☐ 2. Document ID: US 6579973 B1

L15: Entry 2 of 40 File: USPT Jun 17, 2003

US-PAT-NO: 6579973
DOCUMENT-IDENTIFIER: US 6579973 B1

TITLE: Compositions for the treatment and diagnosis of breast cancer and methods for their use

DATE-ISSUED: June 17, 2003

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Yuqiu; Jiang	Kent	WA		
Dillon; Davin C.	Redmond	WA		
Mitcham; Jennifer L.	Redmond	WA		
Xu; Jiangchun	Bellevue	WA		
Harlocker; Susan L.	Seattle	WA		

US-CL-CURRENT: 530/350

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | Claims | KWIC | Draw Desc | Image

☐ 3. Document ID: US 6565856 B1

L15: Entry 3 of 40 File: USPT May 20, 2003

US-PAT-NO: 6565856
DOCUMENT-IDENTIFIER: US 6565856 B1

TITLE: Compounds and methods for treatment and diagnosis of chlamydial infection

DATE-ISSUED: May 20, 2003

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Skeiky; Yasir A. W.	Bellevue	WA		
Scholler; John	Seattle	WA		

US-CL-CURRENT: 424/263.1; 424/282.1, 435/243, 435/252.1, 435/7.32, 435/7.36, 530/300, 530/387.3

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | Claims | KWIC | Draw Desc | Image

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☐ 4. Document ID: US 6558670 B1

L15: Entry 4 of 40 File: USPT May 6, 2003

US-PAT-NO: 6558670
DOCUMENT-IDENTIFIER: US 6558670 B1

TITLE: Vaccine adjuvants

DATE-ISSUED: May 6, 2003

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Friede; Martin	Court St Etienne			BE
Hermand; Philippe	Court St Etienne			BE

US-CL-CURRENT: 424/184.1; 424/278.1, 424/283.1, 514/25

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | KWIC | Draw Desc | Image

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☐ 5. Document ID: US 6558668 B2

L15: Entry 5 of 40 File: USPT May 6, 2003

US-PAT-NO: 6558668
DOCUMENT-IDENTIFIER: US 6558668 B2

TITLE: Methods for detection and treatment of neural cancers

DATE-ISSUED: May 6, 2003

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Liau; Linda M.	Los Angeles	CA		

US-CL-CURRENT: 424/174.1; 435/455

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | KWIC | Draw Desc | Image

☐ 6. Document ID: US 6555115 B1

L15: Entry 6 of 40 File: USPT Apr 29, 2003

US-PAT-NO: 6555115
DOCUMENT-IDENTIFIER: US 6555115 B1

TITLE: Compounds and methods for treatment and diagnosis of chlamydial infection

DATE-ISSUED: April 29, 2003

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Probst; Peter	Seattle	WA		
Bhatia; Ajay	Seattle	WA		
Skeiky; Yasir A. W.	Seattle	WA		
Jen; Shyian	Seattle	WA		
Stromberg; Erika Jean	Seattle	WA		

US-CL-CURRENT: 424/263.1; 424/184.1, 424/185.1, 424/234.1, 514/2, 530/300, 530/324, 530/325, 530/326, 530/350

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | KWIC | Draw Desc | Image

☐ 7. Document ID: US 6544518 B1

L15: Entry 7 of 40 File: USPT Apr 8, 2003

US-PAT-NO: 6544518
DOCUMENT-IDENTIFIER: US 6544518 B1

TITLE: Vaccines

DATE-ISSUED: April 8, 2003

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Friede; Martin	Farnham			GB
Garcon; Nathalie	Wavre			BE
Gerard; Catherine Marie Ghislaine	Rhode Saint Genese			BE
Hermand; Philippe	Court-Saint-Etienne			BE

US-CL-CURRENT: 424/184.1; 424/208.1, 424/228.1, 424/229.1, 424/231.1, 424/249.1, 424/278.1, 424/283.1, 514/25

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | KWIC | Draw Desc | Image

☐ 8. Document ID: US 6537555 B2

L15: Entry 8 of 40 File: USPT Mar 25, 2003

US-PAT-NO: 6537555
DOCUMENT-IDENTIFIER: US 6537555 B2

TITLE: Compositions and methods for the diagnosis and treatment of herpes simplex virus infection

DATE-ISSUED: March 25, 2003

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Hosken; Nancy A.	Seattle	WA		
Day; Craig H.	Seattle	WA		
Dillon; Davin C.	Issaquah	WA		
McGowan; Patrick	Seattle	WA		
Sleath; Paul R.	Seattle	WA		

US-CL-CURRENT: 424/199.1; 424/184.1, 424/186.1, 424/204.1, 424/231.1, 435/235.1, 435/320.1, 435/325, 435/6, 536/23.72

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | KWIC | Draw Desc | Image

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☐ 9. Document ID: US 6531315 B1

L15: Entry 9 of 40 File: USPT Mar 11, 2003

US-PAT-NO: 6531315
DOCUMENT-IDENTIFIER: US 6531315 B1

TITLE: Compositions and methods for the therapy and diagnosis of lung cancer

DATE-ISSUED: March 11, 2003

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Wang; Tongtong	Medina	WA		
Fan; Liqun	Bellevue	WA		
Kalos; Michael D.	Seattle	WA		
Bangur; Chaitanya S.	Seattle	WA		
Hosken; Nancy A.	Seattle	WA		
Fanger; Gary R.	Mill Creek	WA		
Li; Samuel X.	Redmond	WA		
Wang; Aijun	Issaquah	WA		
Skeiky; Yasir A. W.	Bellevue	WA		

US-CL-CURRENT: 435/372.3; 424/184.1, 424/185.1, 435/326

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | KWIC | Draw Desc | Image

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☐ 10. Document ID: US 6528054 B1

L15: Entry 10 of 40 File: USPT Mar 4, 2003

US-PAT-NO: 6528054
DOCUMENT-IDENTIFIER: US 6528054 B1

TITLE: Compositions and methods for the therapy and diagnosis of breast cancer

DATE-ISSUED: March 4, 2003

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Jiang; Yuqiu	Kent	WA		
Dillon; Davin C.	Issaquah	WA		
Mitcham; Jennifer L.	Redmond	WA		
Xu; Jiangchun	Bellevue	WA		
Harlocker; Susan L.	Seattle	WA		
Hepler; William T.	Seattle	WA		

US-CL-CURRENT: 424/130.1; 530/387.1

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments KWIC | Draw Desc | Image

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☐ 11. Document ID: US 6525028 B1

L15: Entry 11 of 40 File: USPT Feb 25, 2003

US-PAT-NO: 6525028
DOCUMENT-IDENTIFIER: US 6525028 B1

TITLE: Immunoeffector compounds

DATE-ISSUED: February 25, 2003

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Johnson; David A.	Hamilton	MT		
Baldridge; Jory R.	Victor	MT		
Sowell; C. Gregory	Bothell	WA		
Cluff; Christopher W.	Hamilton	MT		

US-CL-CURRENT: 514/27; 424/1.73, 424/9.43, 514/23, 514/24, 514/25, 536/17.2, 536/17.3, 536/17.5, 536/18.7, 536/4.1

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments KWIC | Draw Desc | Image

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☐ 12. Document ID: US 6518256 B1

L15: Entry 12 of 40 File: USPT Feb 11, 2003

US-PAT-NO: 6518256
DOCUMENT-IDENTIFIER: US 6518256 B1

TITLE: Compounds and methods for therapy and diagnosis of lung cancer

DATE-ISSUED: February 11, 2003

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Wang; Tongtong	Medina	WA		
Fan; Liqun	Bellevue	WA		
Kalos; Michael D.	Seattle	WA		
Bangur; Chaitanya S.	Seattle	WA		
Hosken; Nancy A.	Seattle	WA		
Fanger; Gary R.	Mill Creek	WA		

US-CL-CURRENT: 514/44; 424/184.1, 435/320.1, 435/325, 435/455, 536/23.1, 536/23.5

☐ 13. Document ID: US 6518237 B1

L15: Entry 13 of 40 File: USPT Feb 11, 2003

US-PAT-NO: 6518237
DOCUMENT-IDENTIFIER: US 6518237 B1

TITLE: Compositions for treatment and diagnosis of breast cancer and methods for their use

DATE-ISSUED: February 11, 2003

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Yuqiu; Jiang	Kent	WA		
Dillon; Davin C.	Redmond	WA		
Mitcham; Jennifer L.	Redmond	WA		
Xu; Jiangchun	Bellevue	WA		

US-CL-CURRENT: 514/2; 435/6, 530/300, 536/23.1

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | KWIC | Draw Desc | Image

☐ 14. Document ID: US 6512094 B1

L15: Entry 14 of 40 File: USPT Jan 28, 2003

US-PAT-NO: 6512094
DOCUMENT-IDENTIFIER: US 6512094 B1

TITLE: Compositions and methods for the therapy and diagnosis of prostate cancer

DATE-ISSUED: January 28, 2003

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Xu; Jiangchun	Bellevue	WA		
Dillon; Davin C.	Issaquah	WA		
Mitcham; Jennifer L.	Redmond	WA		
Harlocker; Susan L.	Seattle	WA		
Jiang; Yuqiu	Kent	WA		
Kalos; Michael D.	Seattle	WA		
Fanger; Gary R.	Mill Creek	WA		
Retter; Marc W.	Carnation	WA		
Stolk; John A.	Bothell	WA		
Day; Craig H.	Seattle	WA		
Vedvick; Thomas S.	Federal Way	WA		
Carter; Darrick	Seattle	WA		
Li; Samuel X.	Redmond	WA		
Wang; Aijun	Issaquah	WA		
Skeiky; Yasir A. W.	Bellevue	WA		
Hepler; William T.	Seattle	WA		
Henderson; Robert A.	Edmonds	WA		

US-CL-CURRENT: 530/350; 424/184.1, 424/185.1, 424/197.11, 435/5, 435/6, 435/91.1, 435/91.2, 530/352, 530/380, 536/23.1, 536/23.7

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments KWIC | Draw Desc | Image

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☐ 15. Document ID: US 6500437 B1

L15: Entry 15 of 40 File: USPT Dec 31, 2002

US-PAT-NO: 6500437
DOCUMENT-IDENTIFIER: US 6500437 B1

TITLE: Leishmania antigens for use in the therapy and diagnosis of leishmaniasis

DATE-ISSUED: December 31, 2002

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Reed; Steven G.	Bellevue	WA		
Campos-Neto; Antonio	Bainbridge Island	WA		
Webb; John R.	Manotick			CA
Dillon; Davin C.	Issaquah	WA		
Skeiky; Yasir A. W.	Seattle	WA		
Bhatia; Ajay	Seattle	WA		

US-CL-CURRENT: 424/269.1; 424/184.1, 424/191.1, 424/192.1, 424/265.1, 424/85.2, 435/69.7, 514/12, 514/2, 514/44, 530/300 , 530/350, 536/23.1, 536/23.4

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments KWIC | Draw Desc | Image

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☐ 16. Document ID: US 6500432 B1

L15: Entry 16 of 40 File: USPT Dec 31, 2002

US-PAT-NO: 6500432
DOCUMENT-IDENTIFIER: US 6500432 B1

TITLE: Method to enhance an immune response of nucleic acid vaccination

DATE-ISSUED: December 31, 2002

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Dalemans; Wilfried	Hoegaarden			BE
Van Mechelen; Marcelle	Wagnelee			BE
Bruck; Claudine	Rixensart			BE
Friede; Martin	Farnham			GB

US-CL-CURRENT: 424/184.1; 514/2, 514/44

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments KWIC | Draw Desc | Image

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☐ 17. Document ID: US 6489101 B1

L15: Entry 17 of 40 File: USPT Dec 3, 2002

US-PAT-NO: 6489101
DOCUMENT-IDENTIFIER: US 6489101 B1

TITLE: Compositions and methods for therapy and diagnosis of breast cancer

DATE-ISSUED: December 3, 2002

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Dillon; Davin C.	Issaquah	WA		

US-CL-CURRENT: 435/6; 435/91.2, 514/44, 530/300, 536/23.1

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | KWIC | Draw Desc | Image

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☐ 18. Document ID: US 6488931 B1

L15: Entry 18 of 40 File: USPT Dec 3, 2002

US-PAT-NO: 6488931
DOCUMENT-IDENTIFIER: US 6488931 B1

TITLE: Compositions and methods for therapy and diagnosis of ovarian cancer

DATE-ISSUED: December 3, 2002

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Mitcham; Jennifer L.	Redmond	WA		
Frudakis; Tony N.	Sarasota	FL		
King; Gordon E.	Seattle	WA		

US-CL-CURRENT: 424/184.1; 424/192.1, 424/277.1, 435/6, 435/69.1, 435/69.3, 435/69.7, 530/300, 530/350, 530/828, 530/853

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | KWIC | Draw Desc | Image

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☐ 19. Document ID: US 6482597 B1

L15: Entry 19 of 40 File: USPT Nov 19, 2002

US-PAT-NO: 6482597
DOCUMENT-IDENTIFIER: US 6482597 B1

TITLE: Compounds and methods for therapy and diagnosis of lung cancer

DATE-ISSUED: November 19, 2002

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Wang; Tongtong	Medina	WA		
Hosken; Nancy A.	Seattle	WA		
Kalos; Michael D.	Seattle	WA		
Fanger; Gary R.	Mill Creek	WA		
Fan; Liqun	Bellevue	WA		

US-CL-CURRENT: 435/7.1; 424/130.1, 424/141.1, 424/155.1, 435/7.23, 530/387.1, 530/388.1

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | KWIC | Draw Desc | Image

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☐ 20. Document ID: US 6468758 B1

L15: Entry 20 of 40 File: USPT Oct 22, 2002

US-PAT-NO: 6468758
DOCUMENT-IDENTIFIER: US 6468758 B1

TITLE: Compositions and methods for ovarian cancer therapy and diagnosis

DATE-ISSUED: October 22, 2002

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Benson; Darin R.	Seattle	WA		
Lodes; Michael J.	Seattle	WA		
Mitcham; Jennifer L.	Redmond	WA		
King; Gordon E.	Seattle	WA		

US-CL-CURRENT: 435/7.23; 435/6, 536/24.31

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | KWIC | Draw Desc | Image

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☐ 21. Document ID: US 6468546 B1

L15: Entry 21 of 40 File: USPT Oct 22, 2002

US-PAT-NO: 6468546
DOCUMENT-IDENTIFIER: US 6468546 B1

TITLE: Compositions and methods for therapy and diagnosis of ovarian cancer

DATE-ISSUED: October 22, 2002

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Mitcham; Jennifer L.	Redmond	WA		
King; Gordon E.	Seattle	WA		
Algate; Paul A.	Issaquah	WA		

US-CL-CURRENT: 424/277.1; 424/184.1, 424/185.1, 424/192.1, 514/2, 530/300, 530/350, 530/806, 530/853

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | KWIC | Draw Desc | Image

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☐ 22. Document ID: US 6465633 B1

L15: Entry 22 of 40 File: USPT Oct 15, 2002

US-PAT-NO: 6465633
DOCUMENT-IDENTIFIER: US 6465633 B1

TITLE: Compositions and methods of their use in the treatment, prevention and diagnosis of tuberculosis

DATE-ISSUED: October 15, 2002

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Skeiky; Yasir	Seattle	WA		

US-CL-CURRENT: 536/23.7; 424/248.1

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | KWIC | Draw Desc | Image

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☐ 23. Document ID: US 6458350 B1

L15: Entry 23 of 40 File: USPT Oct 1, 2002

US-PAT-NO: 6458350
DOCUMENT-IDENTIFIER: US 6458350 B1

TITLE: ULBP DNA and polypeptides

DATE-ISSUED: October 1, 2002

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Cosman; David J.	Bainbridge Island	WA		
Mullberg; Jurgen	Aachen			DE
Fanslow, III; William C.	Normandy Park	WA		
Kubin; Marek	Bainbridge Island	WA		
Armitage; Richard Jeffrey	Bainbridge Island	WA		

US-CL-CURRENT: 424/85.1; 424/85.2, 424/85.4, 424/85.5, 424/9.1, 424/9.2, 435/360, 435/69.5, 530/351

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | KWIC | Draw Desc | Image

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☐ 24. Document ID: US 6451320 B1

L15: Entry 24 of 40 File: USPT Sep 17, 2002

US-PAT-NO: 6451320
DOCUMENT-IDENTIFIER: US 6451320 B1

TITLE: Combined hepatitis and herpesvirus antigen compositions

DATE-ISSUED: September 17, 2002

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Stephenne; Jean	Rixensart			BE
Wettendorff; Martine Anne Cecile	Rhode-Saint-Genese			BE

US-CL-CURRENT: 424/202.1; 424/186.1, 424/189.1, 424/191.1, 424/193.1, 424/196.11, 424/225.1, 424/226.1, 424/227.1, 424/229.1, 424/230.1, 424/231.1

☐ 25. Document ID: US 6448234 B1

L15: Entry 25 of 40 File: USPT Sep 10, 2002

US-PAT-NO: 6448234
DOCUMENT-IDENTIFIER: US 6448234 B1

TITLE: Compounds and methods for treatment and diagnosis of chlamydial infection

DATE-ISSUED: September 10, 2002

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Fling; Steven P.	Bainbridge Island	WA		

US-CL-CURRENT: 514/44; 424/184.1, 424/185.1, 424/248.1, 424/263.1, 424/93.1, 514/2, 530/350, 536/23.1

☐ 26. Document ID: US 6444425 B1

L15: Entry 26 of 40 File: USPT Sep 3, 2002

US-PAT-NO: 6444425
DOCUMENT-IDENTIFIER: US 6444425 B1
**** See image for Certificate of Correction ****

TITLE: Compounds for therapy and diagnosis of lung cancer and methods for their use

DATE-ISSUED: September 3, 2002

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Reed; Steven G.	Bellevue	WA		
Lodes; Michael J.	Seattle	WA		
Mohamath; Raodoh	Seattle	WA		
Secrist; Heather	Seattle	WA		

US-CL-CURRENT: 435/6; 435/91.2

☐ 27. Document ID: US 6432916 B1

L15: Entry 27 of 40 File: USPT Aug 13, 2002

US-PAT-NO: 6432916
DOCUMENT-IDENTIFIER: US 6432916 B1

TITLE: Compounds and methods for treatment and diagnosis of chlamydial infection

DATE-ISSUED: August 13, 2002

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Probst; Peter	Seattle	WA		
Bhatia; Ajay	Seattle	WA		
Skeiky; Yasir A. W.	Bellevue	WA		
Fling; Steven P.	Bainbridge Island	WA		

US-CL-CURRENT: 514/2; 424/130.1, 424/184.1, 424/190.1, 435/7.1, 435/975, 536/23.1, 536/23.4

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments KWIC | Draw Desc | Image

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☐ 28. Document ID: US 6432707 B1

L15: Entry 28 of 40 File: USPT Aug 13, 2002

US-PAT-NO: 6432707
DOCUMENT-IDENTIFIER: US 6432707 B1
**** See image for Certificate of Correction ****

TITLE: Compositions and methods for the therapy and diagnosis of breast cancer

DATE-ISSUED: August 13, 2002

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Reed; Steven G.	Bellevue	WA		
Xu; Jiangchun	Bellevue	WA		
Dillon; Davin C.	Issaquah	WA		

US-CL-CURRENT: 435/325; 435/252.3, 435/320.1, 514/44, 536/23.1

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments KWIC | Draw Desc | Image

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☐ 29. Document ID: US 6426072 B1

L15: Entry 29 of 40 File: USPT Jul 30, 2002

US-PAT-NO: 6426072
DOCUMENT-IDENTIFIER: US 6426072 B1

TITLE: Compositions and methods for the therapy and diagnosis of lung cancer

DATE-ISSUED: July 30, 2002

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Wang; Tongtong	Medina	WA		
Fan; Liqun	Bellevue	WA		
Kalos; Michael D.	Seattle	WA		
Bangur; Chaitanya S.	Seattle	WA		
Hosken; Nancy A.	Seattle	WA		
Fanger; Gary R.	Mill Creek	WA		
Li; Samuel X.	Redmond	WA		
Wang; Aijun	Issaquah	WA		
Skeiky; Yasir A. W.	Bellevue	WA		
Henderson; Robert A.	Edmonds	WA		
McNeill; Patricia D.	Des Moines	WA		

US-CL-CURRENT: 424/184.1; 424/185.1, 435/320.1, 530/300, 530/350, 536/23.1, 536/23.4

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments KWIC | Draw Desc | Image

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☐ 30. Document ID: US 6413518 B1

L15: Entry 30 of 40 File: USPT Jul 2, 2002

US-PAT-NO: 6413518
DOCUMENT-IDENTIFIER: US 6413518 B1

TITLE: Immunologically significant herpes simplex virus antigens and methods for identifying and using same

DATE-ISSUED: July 2, 2002

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Koelle; David M.	Seattle	WA		
Chen; Hongbo	Shoreline	WA		
Corey; Lawrence	Mercer Island	WA		
Hosken; Nancy Ann	Seattle	WA		
McGowan; Patrick	Seattle	WA		
Fling; Steven P.	Bainbridge Island	WA		
Posavad; Christine M.	Seattle	WA		

US-CL-CURRENT: 424/186.1; 424/184.1, 424/192.1, 424/231.1, 435/69.1, 435/69.3, 435/91.1, 435/91.4, 536/23.5

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments KWIC | Draw Desc | Image

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☐ 31. Document ID: US 6395278 B1

L15: Entry 31 of 40 File: USPT May 28, 2002

US-PAT-NO: 6395278
DOCUMENT-IDENTIFIER: US 6395278 B1
**** See image for Certificate of Correction ****

TITLE: Prostate specific fusion protein compositions

DATE-ISSUED: May 28, 2002

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Xu; Jiangchun	Bellevue	WA		
Dillon; Davin C.	Redmond	WA		
Mitcham; Jennifer L.	Redmond	WA		
Harlocker; Susan L.	Seattle	WA		
Yuqiu; Jiang	Kent	WA		

US-CL-CURRENT: 424/192.1; 424/185.1, 424/94.64, 435/212, 530/403

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | KWIC | Draw Desc | Image

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☐ 32. Document ID: US 6375952 B1

L15: Entry 32 of 40 File: USPT Apr 23, 2002

US-PAT-NO: 6375952
DOCUMENT-IDENTIFIER: US 6375952 B1
**** See image for Certificate of Correction ****

TITLE: Immunological herpes simplex virus antigens and methods for use thereof

DATE-ISSUED: April 23, 2002

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Koelle; David M.	Seattle	WA		
Corey; Lawrence	Seattle	WA		

US-CL-CURRENT: 424/186.1; 424/192.1, 424/199.1, 424/231.1, 435/235.1, 435/252.3, 435/320.1, 435/325, 435/69.3, 435/69.7 , 530/350, 536/23.4, 536/23.7

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | KWIC | Draw Desc | Image

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☐ 33. Document ID: US 6375945 B1

L15: Entry 33 of 40 File: USPT Apr 23, 2002

US-PAT-NO: 6375945
DOCUMENT-IDENTIFIER: US 6375945 B1

TITLE: Adjuvant compositions for vaccines

DATE-ISSUED: April 23, 2002

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Boon; Thierry	Brussels			BE
Silla; Silvia	Brussels			BE
Uyttenhove; Catherine	Chaumont Gistoux			BE

US-CL-CURRENT: 424/85.2; 424/184.1, 424/185.1, 424/450, 530/351

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | KWIC | Draw Desc | Image

☐ 34. Document ID: US 6372227 B1

L15: Entry 34 of 40 File: USPT Apr 16, 2002

US-PAT-NO: 6372227
DOCUMENT-IDENTIFIER: US 6372227 B1

TITLE: Vaccines

DATE-ISSUED: April 16, 2002

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Garcon; Nathalie	Wavre			BE
Momin; Patricia Marie Christine Aline Francoise	Brussells			BE

US-CL-CURRENT: 424/283.1; 424/184.1, 424/278.1, 514/937, 514/938, 514/943

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | KWIC | Draw Desc | Image

☐ 35. Document ID: US 6350456 B1

L15: Entry 35 of 40 File: USPT Feb 26, 2002

US-PAT-NO: 6350456
DOCUMENT-IDENTIFIER: US 6350456 B1

TITLE: Compositions and methods for the prevention and treatment of M. tuberculosis infection

DATE-ISSUED: February 26, 2002

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Reed; Steven G.	Bellevue	WA		
Skeiky; Yasir A. W.	Seattle	WA		
Dillon; Davin C.	Redmond	WA		

US-CL-CURRENT: 424/248.1; 424/168.1, 435/252.1, 435/252.3, 435/253.1, 435/320.1, 435/325, 435/6, 435/7.1

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | KWIC | Draw Desc | Image

☐ 36. Document ID: US 6342224 B1

L15: Entry 36 of 40 File: USPT Jan 29, 2002

US-PAT-NO: 6342224
DOCUMENT-IDENTIFIER: US 6342224 B1

TITLE: Recombinant papillomavirus vaccine and method for production and treatment

DATE-ISSUED: January 29, 2002

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Bruck; Claudine	Rixensart			BE
Silva; Teresa Cabezon	Lenkebeek			BE
Fernande Delisse; Anne-Marie Eva	Gosselies			BE
Ghislaine Gerard; Catherine Marie	Rhode Saint Genese			BE
Lombardo-Bencheikh; Angela	Wavre			BE

US-CL-CURRENT: 424/192.1; 424/185.1, 424/186.1, 424/204.1, 435/252.3, 435/320.1, 435/325, 435/69.3, 435/69.7, 530/350, 536/23.4, 536/23.72

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | KWIC | Draw Desc | Image

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☐ 37. Document ID: US 6329505 B1

L15: Entry 37 of 40 File: USPT Dec 11, 2001

US-PAT-NO: 6329505
DOCUMENT-IDENTIFIER: US 6329505 B1

TITLE: Compositions and methods for therapy and diagnosis of prostate cancer

DATE-ISSUED: December 11, 2001

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Xu; Jiangchun	Bellevue	WA		
Dillon; Davin C.	Redmond	WA		
Mitcham; Jennifer L.	Redmond	WA		
Harlocker; Susan L.	Seattle	WA		
Yuqiu; Jiang	Kent	WA		
Reed; Steve G.	Bellevue	WA		
Kalos; Michael D.	Seattle	WA		
Fanger; Gary R.	Mill Creek	WA		
Retter; Marc W.	Bellevue	WA		
Stolk; John A.	Bothell	WA		
Day; Craig H.	Seattle	WA		

US-CL-CURRENT: 530/350; 435/6, 536/23.1

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | KWIC | Draw Desc | Image

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☐ 38. Document ID: US 5776468 A

L15: Entry 38 of 40 File: USPT Jul 7, 1998

US-PAT-NO: 5776468
DOCUMENT-IDENTIFIER: US 5776468 A

TITLE: Vaccine compositions containing 3-0 deacylated monophosphoryl lipid A

DATE-ISSUED: July 7, 1998

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Hauser; Pierre	Chaumont-Gistoux			BE
Voet; Pierre	Izel			BE
Slaoui; Moncef	Rixensart			BE
Garcon-Johnson; Nathalie Marie-Josephe Claude	Wavre			BE
Desmons; Pierre	Nivelles			BE

US-CL-CURRENT: 424/226.1; 424/192.1, 424/202.1, 424/282.1

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments

KWIC | Draw Desc | Image

☐ 39. Document ID: US 5750110 A

L15: Entry 39 of 40 File: USPT May 12, 1998

US-PAT-NO: 5750110
DOCUMENT-IDENTIFIER: US 5750110 A

TITLE: Vaccine composition containing adjuvants

DATE-ISSUED: May 12, 1998

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Prieels; John Paul	Brussels			BE
Garcon-Johnson; Nathalie Marie-Josephe Claude	Wavre			BE
Slaoui; Moncef	Rixensart			BE
Pala; Pietro	Rixensart			BE

US-CL-CURRENT: 424/208.1; 424/184.1, 424/188.1, 424/204.1

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments

KWIC | Draw Desc | Image

☐ 40. Document ID: ZA 200108620 A WO 200062801 A2 AU 200055233 A EP 1171159 A2 BR 200010682 A KR 2001110784 A CZ 200103773 A3 CN 1355710 A HU 200201905 A2 JP 2002542204 W AU 754101 B

L15: Entry 40 of 40 File: DWPI Nov 27, 2002

DERWENT-ACC-NO: 2001-006956
DERWENT-WEEK: 200305
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TITLE: New combination vaccine comprises Streptococcus pneumoniae polysaccharides and an respiratory syncytial virus (RSV) antigen and is useful for preventing or ameliorating RSV and/or Streptococcus pneumoniae infection

INVENTOR: DESCHAMPS, M; LAFARRIERE, C A J ; LAFERRIERE, C A J ; ANTONY, J ; LAFERRIERE, C

PRIORITY-DATA: 1999GB-0009077 (April 20, 1999)

PATENT-FAMILY:

PUB-NO	PUB-DATE	LANGUAGE	PAGES	MAIN-IPC
ZA 200108620 A	November 27, 2002		081	A61K000/00
WO 200062801 A2	October 26, 2000	E	066	A61K039/00
AU 200055233 A	November 2, 2000		000	A61K039/00
EP 1171159 A2	January 16, 2002	E	000	A61K039/295
BR 200010682 A	February 5, 2002		000	A61K039/00
KR 2001110784 A	December 13, 2001		000	A61K039/00
CZ 200103773 A3	May 15, 2002		000	A61K039/00
CN 1355710 A	June 26, 2002		000	A61K039/295
HU 200201905 A2	September 30, 2002		000	A61K039/295
JP 2002542204 W	December 10, 2002		072	A61K039/09
AU 754101 B	November 7, 2002		000	A61K039/00

INT-CL (IPC): A61 K 0/00; A61 K 9/107; A61 K 31/715; A61 K 39/00; A61 K 39/05; A61 K 39/08; A61 K 39/09; A61 K 39/145; A61 K 39/155; A61 K 39/295; A61 K 39/385; A61 K 39/39; A61 K 39:39; A61 K 47/02; A61 K 47/22; A61 P 11/00 ; A61 P 25/00; A61 P 31/04; A61 P 31/14

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ALUMINUM	597584
ALUMINIUM	285889
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(14 AND (OIL-IN-WATER? OR ALUMINUM OR CARRIER)).USPT,JPAB,EPAB,DWPI.	40
(L14 AND (CARRIER OR OIL-IN-WATER? OR ALUMINUM)).USPT,JPAB,EPAB,DWPI.	40

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☑	USPT,JPAB,EPAB,DWPI	L2 and (t-helper epitopes or facilitate? or stabiliz?)	YES	ADJ		L3
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☑	USPT,JPAB,EPAB,DWPI	L1 and (recombinant)	YES	ADJ		L5
☑	USPT,JPAB,EPAB,DWPI	L5 and l2	YES	ADJ		L6
☑	USPT,JPAB,EPAB,DWPI	recombinant fusion protein and(t-helper epitopes or facilitate or stabiliz)	YES	ADJ		L7
☑	USPT,JPAB,EPAB,DWPI	L7 and (stabilize)	YES	ADJ		L8
☑	USPT,JPAB,EPAB,DWPI	L8 and(t-helper epitope)	YES	ADJ		L9
☑	USPT,JPAB,EPAB,DWPI	L7 and (stabilize)	YES	ADJ		L10
☑	USPT,JPAB,EPAB,DWPI	adjuvant	YES	ADJ		L11
☑	USPT,JPAB,EPAB,DWPI	L11 and TH1 type?	YES	ADJ		L12
☑	USPT,JPAB,EPAB,DWPI	L11 and(th1 or t cell respon?)	YES	ADJ		L13
☑	USPT,JPAB,EPAB,DWPI	L13 and (3d mpl or q21)	YES	ADJ		L14
☑	USPT,JPAB,EPAB,DWPI	L14 and (carrier or oil-in-water? or aluminum)	YES	ADJ		L15

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L9: Entry 1 of 8 File: USPT Apr 8, 2003

US-PAT-NO: 6544518
DOCUMENT-IDENTIFIER: US 6544518 B1

TITLE: Vaccines

DATE-ISSUED: April 8, 2003

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Friede; Martin	Farnham			GB
Garcon; Nathalie	Wavre			BE
Gerard; Catherine Marie Ghislaine	Rhode Saint Genese			BE
Hermand; Philippe	Court-Saint-Etienne			BE

US-CL-CURRENT: 424/184.1; 424/208.1, 424/228.1, 424/229.1, 424/231.1, 424/249.1, 424/278.1, 424/283.1, 514/25

CLAIMS:

What is claimed is:

1. An adjuvant composition comprising a QS21 and an immunostimulatory oligonucleotide containing an unmethylated CG dinucleotide.

2. An adjuvant composition according to claim 1 further comprising a carrier.

3. An adjuvant composition as claimed in claim 1, wherein said immunostimulatory oligonucleotide comprises a Purine, Purine, C, G, pyrimidine, pyrimidine sequence.

4. An adjuvant composition as claimed in claim 1, wherein said immunostimulatory oligonucleotide is selected from the group comprising: TCC ATG ACG TTC CTG ACG TT (SEQ ID NO:1); TCT CCC AGC GTG CGC CAT (SEQ ID NO:2); ACC GAT GAC GTC GCC GGT GAC GGC ACC ACG (SEQ ID NO:3); TCG TCG TTT TGT CGT TTT GTC GTT (SEQ ID NO:4); TCC ATG ACG TTC CTG ATG CT (SEQ ID NO:5).

5. An adjuvant composition as claimed in claim 1, wherein the immunostimulatory oligonucleotide contains at least two unmethylated CG repeats being separated at least by 3 nucleotides.

6. An adjuvant composition according to claim 5, wherein the immunostimulatory oligonucleotide contains at least two unmethylated CG repeats being separated by 6 nucleotides.

7. An adjuvant composition as claimed in claim 2, wherein said carrier is a particulate carrier selected from the group comprising metallic salt particles, emulsions, polymers, liposomes, ISCOMs.

8. An immunogenic composition comprising an adjuvant composition as claimed in claims 1 or 2, further comprising an antigen.

9. An immunogenic composition as claimed in claim 8, wherein said antigen is

derived from an organism selected from the group comprising: Human Immunodeficiency Virus, Varicella Zoster virus, Herpes Simplex Virus type 1, Herpes Simplex virus type 2, Human cytomegalovirus, Dengue virus, Hepatitis A, B, C or E, Respiratory Syncytial virus, human papilloma virus, Influenza virus, Hib, Meningitis virus, Salmonella, Neisseria, Borrelia, Chlamydia, Bordetella, Streptococcus, Mycoplasma, Mycobacteria, Haemophilus, Plasmodium or Toxoplasma, stanworth decapeptide; or the N terminal 39-43 amino acid fragment (Abeta) of the amyloid precursor protein or antigens associated with atheroschlerosis.

10. An immunogenic composition as claimed in claim 8 wherein the vaccine is administered systemically.

11. An immunogenic composition as claimed in claim 8 wherein the vaccine is administered mucosally.

12. A delivery device pre-filled with the immunogenic composition of claim 8, said device being designed to administer the immunogenic composition systemically.

13. An adjuvant composition according to claim 1 or 2, wherein QS21 is in the form of a liposome.

14. An adjuvant composition according to claim 1 or 2, wherein QS21 is in the form of an oil in water emulsion.

15. An adjuvant composition as claimed in claim 7, wherein the metallic salt particle is aluminium hydroxide or aluminium phosphate.

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L9: Entry 1 of 8 File: USPT Apr 8, 2003

DOCUMENT-IDENTIFIER: US 6544518 B1
TITLE: Vaccines

Brief Summary Text (17):
The oligonucleotides utilised in the present invention are typically deoxynucleotides. In a preferred embodiment the internucleotide bond in the oligonucleotide is phosphorodithioate, or more preferably phosphorothioate bond, although phosphodiesters are within the scope of the present invention. Oligonucleotide comprising different internucleotide linkages are contemplated, e.g. mixed phosphorothioate phophodiesters. Other internucleotide bonds which stabilise the oligonucleotide may be used.

Brief Summary Text (51):
WO 95/17210 and WO 99/11241 disclose emulsion adjuvants based on squalene, .alpha.-tocopherol, and TWEEN 80, optionally formulated with the immunostimulants QS21 and/or 3D-MPL. WO 99/12565 discloses an improvement to these squalene emulsions with the addition of a sterol into the oil phase. Additionally, a triglyceride, such as tricaprylin (C27H5006), may be added to the oil phase in order to stabilise the emulsion (WO 98/56414).

Brief Summary Text (69):
MAGE antigens for use in the present invention may be expressed as a fusion protein with an expression enhancer or an Immunological fusion partner. In one embodiment of the present invention, the derivative is a fusion proteins comprising an antigen from the MAGE protein family linked to a heterologous partner. For example MAGE 3. The proteins may be chemically conjugated, but are preferably expressed as recombinant fusion proteins allowing increased levels to be produced in an expression system as compared to non-fused protein. Thus the fusion partner may assist in providing T helper epitopes(immunological fusion partner), preferably T helper epitopes recognised by humans, or assist in expressing the protein (expression enhancer) at higher yields than the native recombinant protein. Preferably the fusion partner will be both an immunological fusion partner and expression enhancing partner.

Brief Summary Text (71):
Other fusion partners include the non-structural protein from influenzae virus, NS1 (hemagglutinin). Typically the N terminal 81 amino acids are utilised, although different fragments may be used provided they include T-helper epitopes.

Brief Summary Text (80):
In one embodiment, the Prostase either mutated or non mutated is part of a fusion protein, comprising the tumour-associated prostase or fragment or humologues thereof and a heterologous protein or part of a protein acting as a fusion partner. The protein and the fusion partner may be chemically conjugated, but are preferably expressed as recombinant fusion proteins in a heterologous expression system.

Brief Summary Text (83):
Preferably the fusion partner will be both an immunological fusion partner and an expression enhancer partner. Accordingly, the present invention provides fusion proteins comprising a mutated tumour-specific prostase or a fragment thereof linked to a fusion partner. Preferably the fusion partner is acting both as an immunological fusion partner and as an expression enhancer partner. Accordingly, in a preferred form of the invention, the fusion partner is the non-structural protein from influenzae virus, NS) (hemagglutinin) or fragment thereof, Typically the N-terminal 81 amino acids are utilised, although different fragments may be used provided they include T-helper epitopes (C. Hackett, D. Horowitz, M. Wysocka & S. Dillon, 1992, J. Gen. Virology, 73, 1339-1343). When NS1 is the immunological fusion partner it has the additional advantage in that it allows higher expression yields to be achieved. In particular,

such fusions are expressed at higher yields than the native recombinant prostase proteins.

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L7: Entry 2 of 876 File: USPT Jul 8, 2003

DOCUMENT-IDENTIFIER: US 6589764 B1
TITLE: IL-18 receptor fusion proteins

Brief Summary Text (46):
In one embodiment of the present invention, the receptor protein is a recombinant fusion protein of the formula:

Brief Summary Text (54):
In the expression vectors, regulatory elements controlling transcription or translation are generally derived from manmmalian, microbial, viral or insect genes. The ability to replicate in a host, usually conferred by an origin of replication, and a selection gene to facilitate recognition of transformants may additionally be incorporated. Vectors derived from retrovirses also may be employed.

Brief Summary Text (62):
Preferred yeast vectors can be assembled using DNA sequences from pBR322 for selection and replication in E. coli (Amp.sup.r gene and origin of replication) and yeast DNA sequences including a glucose-repressible ADH2 promoter and .alpha.-factor secretion leader. The ADH2 promoter has been described by Russell et al. (J. Biol. Chem. 258:2674, 1982) and Beier et al., (Nature 300:724, 1982). The yeast .alpha.-factor leader, which directs secretion of heterologous proteins, can be inserted between the promoter and the structural gene to be expressed. See, e.g., Kudjan et al., Cell 30:922, 1982; and Bitter et al., Proc. Natl. Acd. Sci. USA 81:5330, 1984. The leader sequence may be modified to contain, near its 3' end, one or more useful restriction sites to facilitate fusion of the leader sequence to foreign genes.

Brief Summary Text (74):
Recombinant protein produced in bacterial culture is usually isolated by initial extraction from cell pellets, followed by one or more concentration, salting-out, aqueous ion exchange or size exclusion chromatography steps. Finally, high performance liquid chromatography (HPLC) can be employed for final purification steps. Microbial cells employed in expression of recombinant fusion proteins can disrupted by any convenient method, including freeze-thaw cycling, sonication, mechanical disruption, or use of cell lysing agents.

Brief Summary Text (90):
Peptides may be fused to the desired protein (e.g., via recombinant DNA techniques) to facilitate purification or identification. Examples include poly-His or the Flag.RTM. peptide (Hopp et al., Bio/Technology 6:1204, 1988, and U.S. Pat. No. 5,011,912). The Flag.RTM. peptide is highly antigenic and provides an epitope reversibly bound by a specific monoclonal antibody, enabling rapid assay and facile purification of expressed recombinant protein. Expression systems useful for fusing the Flag.RTM. octapeptide to the N- or C-terminus of a given protein are available from Eastman Kodak Co., Scientific Imaging Systems Division, New Haven, Conn., as are monoclonal antibodies that bind the octapeptide.

Detailed Description Text (21):
First, an expression vector encoding the entire constant region of human IgG1 with a linker region upstream is constructed. Such an expression vector facilitates the creation of fusion protein-encoding plasmids. PCR techniques are utilized to amplify the above mentioned IgG1 constant region with primers containing an upstream BglII site and a downstream NotI site. The resulting PCR generated fragment is digested, purified, and ligated to pDC412 which is digested with BglII and NotI. The pDC412-hIgG1 expression vector is then digested with SalI and BglII.

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DATE: Wednesday, July 09, 2003 Printable Copy Create Case

L15: Entry 4 of 40 File: USPT May 6, 2003

DOCUMENT-IDENTIFIER: US 6558670 B1
TITLE: Vaccine adjuvants

Abstract Text (1):
The present invention relates to adjuvant compositions which are suitable to be used in vaccines. In particular, the adjuvant compositions of the present invention comprises a saponin and an immunostimulatory oligonucleotide, preferably the saponins used in said adjuvant combinations are haemolytic. Also provided by the present invention are vaccines comprising the adjuvants of the present invention and an antigen. Further provided are methods of manufacture of the adjuvants and vaccines of the present invention and their use as medicaments.

Brief Summary Text (1):
The present invention relates to adjuvant compositions which are suitable to be used in vaccines. In particular, the adjuvant compositions of the present invention comprises a saponin and an immunostimulatory oligonucleotide, preferably the saponins used in said adjuvant combinations are haemolytic. Also provided by the present invention are vaccines comprising the adjuvants of the present invention and an antigen. Further provided are methods of manufacture of the adjuvants and vaccines of the present invention and their use as medicaments.

Brief Summary Text (3):
Immunostimulatory oligonucleotides containing unmethylated CpG dinucleotides ("CpG") and are known in the art as being adjuvants when administered by both systemic and mucosal routes (WO 96/02555, EP 468520, Davis et al., J.Immunol, 1998, 160(2):870-876; McCluskie and Davis, J.Immunol., 1998, 161(9):4463-6). CpG is an abbreviation for cytosine-guanosine dinucleotide motifs present in DNA. Historically, it was observed that the DNA fraction of BCG could exert an anti-tumour effect. In further studies, synthetic oligonucleotides derived from BCG gene sequences were shown to be capable of inducing immunostimulatory effects (both in vitro and in vivo). The authors of these studies concluded that certain palindromic sequences, including a central CG motif, carried this activity. The central role of the CG motif in immunostimulation was later elucidated in a publication by Krieg, Nature 374, p546 1995. Detailed analysis has shown that the CG motif has to be in a certain sequence context, and that such sequences are common in bacterial DNA but are rare in vertebrate DNA. The immunostimulatory sequence is often: Purine, Purine, C, G, pyrimidine, pyrimidine; wherein the CG motif is not methylated, but other unmethylated CpG sequences are known to be immunostimulatory and may be used in the present invention.

Brief Summary Text (5):
CpG when formulated into vaccines, is generally administered in free solution together with free antigen (WO 96/02555; McCluskie and Davis, supra) or covalently conjugated to an antigen (PCT Publication No. WO 98/16247), or formulated with a carrier such as aluminium hydroxide ((Hepatitis surface antigen) Davis et al. supra ; Brazolot-Millan et al., Proc.Natl.Acad.Sci., USA, 1998, 95(26), 15553-8).

Brief Summary Text (7):
Saponins are known as adjuvants in vaccines for systemic administration. The adjuvant and haemolytic activity of individual saponins has been extensively studied in the art (Lacaille-Dubois and Wagner, supra). For example, Quil A (derived from the bark of the South American tree Quillaja Saponaria Molina), and fractions thereof, are described in U.S. Pat. No. 5,057,540 and "Saponins as vaccine adjuvants", Kensil, C. R., Crit Rev Ther Drug Carrier Syst, 1996, 12 (1-2):1-55; and EP0 362 279B1.

Brief Summary Text (8):
Particulate structures, termed Immune Stimulating Complexes (ISCOMS), comprising fractions of Quil A are haemolytic and have been used in the manufacture of vaccines (Morein, B., EP 0 109 942 B 1). These structures have been reported to have adjuvant activity (EP 0 109 942 B1; WO 96/11711).

Brief Summary Text (9):
The haemolytic saponins QS21 and QS 17 (HPLC purified fractions of Quil A) have been described as potent systemic adjuvants, and the method of their production is disclosed in U.S. Pat. No.5,057,540 and EP 0 362 279 B 1. Also described in these references is the use of QS7 (a non-haemolytic fraction of Quil-A) which acts as a potent adjuvant for systemic vaccines. Use of QS21 is further described in Kensil et al. (1991. J. Immunology vol 146, 431-437). Combinations of QS21 and polysorbate or cyclodextrin are also known (WO 99/10008). Particulate adjuvant systems comprising fractions of QuilA, such as QS21 and QS7 are described in WO 96/33739 and WO 96/11711.

Brief Summary Text (11):
Saponins are also known to have been used in mucosally applied vaccine studies, which have met with variable success in the induction of immune responses. Quil-A saponin has previously been shown to have no effect on the induction of an immune response when antigen is administered intranasally (Gizurarson et al. 1994. Vaccine Research 3, 23-29). Whilst, other authors have used this adjuvant with success (Maharaj et al., Can.J.Microbiol, 1986, 32(5):414-20; Chavali and Campbell, Immunobiology, 174(3):347-59). ISCOMs comprising Quil A saponin have been used in intragastric and intranasal vaccine formulations and exhibited adjuvant activity (McI Mowat et al., 1991, Immunology, 72, 317-322; McI Mowat and Donachie, Immunology Today, 12, 383-385).

Brief Summary Text (12):
QS21, the non-toxic fraction of Quil A, has also been described as an oral or intranasal adjuvant (Sumino et al., J.Virol., 1998, 72(6):4931-9; WO 98/56415).

Brief Summary Text (15):
The present invention provides an adjuvant composition comprising a saponin and an immunostimulatory oligonucleotide; particularly wherein said saponin has haemolytic activity. Preferred saponins include Quil A, QS21, QS7, QS 17, .beta.-escin, or digitonin. Preferred immunostimulatory oligonucleotides comprise the following sequence: Purine, Purine, C, G, pyrimidine, pyrimidine.

Brief Summary Text (16):
The present invention also provides preferred vaccine compositions containing the claimed adjuvant compositions; methods of treatment by administration of vaccines containing the claimed adjuvant compositions; and methods of inducing a systemic antigen-specific immune response comprising administration of vaccine compositions comprising a haemolytic saponin and a Cp G molecule.

Detailed Description Text (2):
The present invention relates to the surprising finding that immuno-stimulatory oligonucleotides (CpG) and saponin combinations are extremely potent adjuvants. Accordingly, there is provided an adjuvant composition comprising a saponin and an immunostimulatory oligonucleotide. In a preferred form of the present invention the saponin and oligonucleotides in the adjuvant and vaccine compositions act synergistically in the induction of antigen specific antibody.

Detailed Description Text (3):
The adjuvant combinations of the present invention are used in the formulation of vaccines, which vaccines may be administered via the systemic or mucosal route. Preferably, when the vaccines are used for mucosal administration the adjuvant combination comprises a haemolytic saponin.

Detailed Description Text (4):
The preferred oligonucleotides for use in adjuvants or vaccines of the present invention preferably contain two or more CpG motifs separated by six or more nucleotides. The oligonucleotides of the present invention are typically deoxynucleotides. In a preferred embodiment the internucleotide in the oligonucleotide is phosphorodithioate, or more preferably a phosphorothioate bond, although phosphodiester and other internucleotide bonds are within the scope of the invention including oligonucleotides with mixed internucleotide linkages. Methods

for producing phosphorothioate oligonucleotides or phosphorodithioate are described in U.S. Pat. No. 5,666,153, U.S. Pat. No. 5,278,302 and WO95/26204.

Detailed Description Text (8):
The saponins which may be used in the adjuvant combinations of the present invention include those derived from the bark of Quillaja Saponaria Molina, termed Quil A, and fractions thereof, described in U.S. Pat. No. 5,057,540 and "Saponins as vaccine adjuvants", Kensil, C. R., Crit Rev Ther Drug Carrier Syst, 1996, 12 (1-2):1-55; and EP 0 362 279 B1. Particularly preferred fractions of Quil A are QS21, QS7, and QS17.

Detailed Description Text (9):
.beta.-Escin is another preferred haemolytic saponins for use in the adjuvant compositions of the present invention. Escin is described in the Merck index (12.sup.th ed: entry 3737) as a mixture of saponins occurring in the seed of the horse chestnut tree, Lat: Aesculus hippocastanum. Its isolation is described by chromatography and purification (Fiedler, Arzneimittel-Forsch. 4, 213 (1953)), and by ion-exchange resins (Erbring et al., U.S. Pat. No. 3,238,190). Fractions of escin, .alpha. and .beta., have been purified and shown to be biologically active (Yoshikawa M, et al. (Chem Pharm Bull (Tokyo) 1996 Aug;44(8):1454-1464)). .beta.-escin is also known as aescin.

Detailed Description Text (11):
The adjuvant combinations of the present invention, represent a class of mucosal adjuvants suitable for application in humans to replace systemic vaccination by mucosal vaccination. In a preferred form of the present invention pure saponins such as Quil A, or derivatives thereof, including QS21; Escin; Digitonin; or Gypsophila or Chenopodium quinoa saponins in combination with immunostimulatory oligonucleotides may be used as adjuvants for the mucosal administration of antigens to achieve a systemic immune response.

Detailed Description Text (12):
In an alternative aspect of the present invention there is provided a mucosal adjuvant, suitable for vaccines to be administered to a mucosal surface. For mucosal administration preferably the composition of the invention comprise a haemolytic saponin. Haemolytic saponin, or saponin preparation, within the meaning of this invention is to be determined with reference to the following assay. 1. Fresh blood from guinea pigs is washed with phosphate buffered saline (PBS) 3 times in a desk-top centrifuge. After resuspension to the original volume the blood is further diluted 10 fold in PBS. 2. 50 .mu.l of this blood suspension is added to 800 .mu.l of PBS containing two-fold dilutions of surfactant or saponin. 3. After 8 hours the haemolysis is assessed visually or by measuring the optical density of the supernatant. The presence of a red supernatant, which absorbs light at 570 nm indicates the presence of haemolysis. 4. The results are expressed as the concentration of the first saponin dilution at which hemolysis no longer occurs.

Detailed Description Text (13):
For the purposes of this invention the saponin adjuvant preparation is haemolytic if it lyses the erythrocytes at a concentration of less than 0.1%. As means of reference, substantially pure samples of QuilA, QS21, QS7, Digitonin, and .beta.-escin are all haemolytic saponins as defined in this assay.

Detailed Description Text (14):
The saponins of the present invention may be in the form of an aqueous solution of saponin or in the form of aggregates such as micelles, or ordered aggregates in combination with other non-saponin constituents. For example, the saponin may be in the form of an ISCOM or a liposome in the presence of additional cholesterol and phospholipid. Alternatively the saponin may be associated with a particulate carrier such as chitosan. The saponin may also be in a dry state such as a powder. The final formulations in the form as they are administered to the mucosal surface of the vaccine are preferably haemolytic in nature.

Detailed Description Text (15):
Preparations of more than one saponin in the adjuvant combinations of the present invention are also form part of the present invention. For example combinations of at least two of the following group comprising QS21, QS7, Quil A, .beta.-escin, or digitonin. Additionally, the compositions of the present invention may comprise combinations of more than one immunostimulatory oligonucleotide.

Detailed Description Text (19):
In a preferred embodiment of the present invention vaccines containing the claimed adjuvant comprise antigen derived from the Human Papilloma Virus (HPV) considered to be responsible for genital warts, (HPV 6 or HPV 11 and others), and the HPV viruses responsible for cervical cancer (HPV16, HPV18 and others).

Detailed Description Text (24):
Particularly preferred HPV 16 antigens comprise the early proteins E6 or E7 in fusion with a protein D carrier to form Protein D- E6 or E7 fusions from HPV 16, or combinations thereof; or combinations of E6 or E7 with L2 (WO 96/26277).

Detailed Description Text (28):
The formulations may also contain an anti-tumour antigen and be useful for the immunotherapeutic treatment cancers. For example, the adjuvant formulation finds utility with tumour rejection antigens such as those for prostrate, breast, colorectal, lung, pancreatic, renal or melanoma cancers. Exemplary antigens include MAGE 1 and MAGE 3 or other MAGE antigens for the treatment of melanoma, PRAME, BAGE or GAGE (Robbins and Kawakami, 1996, Current Opinions in Immunology 8, pps 628-636; Van den Eynde et al., International Journal of Clinical & Laboratory Research (submitted 1997); Correale et al. (1997), Journal of the National Cancer Institute 89, p293. Indeed these antigens are expressed in a wide range of tumour types such as melanoma, lung carcinoma, sarcoma and bladder carcinoma. Other Tumor-Specific antigens are suitable for use with adjuvant of the present invention and include, but are not restricted to Prostate specific antigen (PSA) or Her-2/neu, KSA (GA733), MUC-1 and carcinoembryonic antigen (CEA). Accordingly in one aspect of the present invention there is provided a vaccine comprising an adjuvant composition according to the invention and a tumour rejection antigen.

Detailed Description Text (34):
The amount of CpG or immunostimulatory oligonucleotides in the adjuvants or vaccines of the present invention is generally small, but depending on the vaccine formulation may be in the region of 1-1000 .mu.g per dose, preferably 1-500.mu.g per dose, and more preferably between 1 to 100 .mu.g per dose.

Detailed Description Text (35):
The amount of saponin for use in the adjuvants of the present invention may be in the region of 1-1000 .mu.g per dose, preferably 1-500 .mu.g per dose, more preferably 1-25 .mu.g per dose, and most preferably between 1 to 100 .mu.g per dose. The ratio of CpG:saponin (w/w) will, therefore, be in the range of 1:1000 to 1000:1, and will typically be in the range of 1:100 to 100:1, and preferably in the range of 1:10 to 10:1.

Detailed Description Text (36):
The CpG used in the adjuvant combinations of the present invention may be in free solution of may be complexed to particulate carriers, for example aluminium or calcium salts, liposomes, ISCOMs, oil in water emulsions, polylactide polyglycolide microparticles, or alginates. Preferably said carriers are cationic. The vaccines of the present invention further comprise an antigen which may be associated with the CpG-carrier complex, or may not be associated with the CpG-carrier complex. In this case, the antigen may be free suspension or associated with a separate carrier.

Detailed Description Text (37):
The CpG and saponin in the adjuvants or vaccines of the present invention may be separate or associated. For example, the CpG and saponin may be in free suspension or may be associated via a carrier such as aluminium hydroxide or by a cationic liposome or ISCOM.

Detailed Description Text (38):
The saponins forming part of the present invention may be separate in the form of micelles, or may be in the form of large ordered structures such as ISCOMs (EP 0 109 942 B1) or liposomes (WO 96/33739) when formulated with cholesterol and lipid, or in the form of an oil in water emulsion (WO 95/17210). The saponins may preferably be associated with a metallic salt, such as aluminium hydroxide or aluminium phosphate (WO 98/15287).

Detailed Description Text (39):
In a similar embodiment of the present invention the haemolytic saponin preparations will further be combined with other adjuvants including Monophosphoryl Lipid A and its non-toxic derivative 3-de-O-acylated monophosphoryl lipid A. Alternatively the

saponin formulations may be combined with vaccine vehicles composed of chitosan or other polycationic polymers, polylactide and polylactide-co-glycolide particles, particles composed of polysaccharides or chemically modified polysaccharides, liposomes and lipid-based particles, particles composed of glycerol monoesters, etc. The saponins may also be formulated in the presence of cholesterol to form particulate structures such as liposomes or ISCOMs. Furthermore, the saponins may be formulated together with a polyoxyethylene ether or ester, in either a non-particulate solution or suspension, or in a particulate structure such as a paucilamelar liposome or ISCOM. The saponins may also be formulated with excipients such as Carbopol.RTM. to increase viscosity, or may be formulated in a dry powder form with a powder excipient such as lactose.

Detailed Description Text (40):
3 De-O-acylated monophosphoryl lipid A is a well known adjuvant manufactured by Ribi Immunochem, Montana. It can be prepared by the methods taught in GB 2122204B. A preferred form of 3 De-O-acylated monophosphoryl lipid A is in the form of an emulsion having a small particle size less than 0.2 .mu.m in diameter (EP 0 689 454 B1). Particularly preferred adjuvants are combinations of 3D-MPL and QS21 (EP 0 671 948 B1), oil in water emulsions comprising 3D-MPL and QS21 (WO 95/17210, WO 98/56414), or 3D-MPL formulated with other carriers (EP 0 689 454 B1).

Detailed Description Text (41):
The saponin may or may not be associated physically with the antigen either through direct linkage or by co-interaction with the same particulate carrier molecule (GB9822712.7; WO 98/16247)

Detailed Description Text (43):
The formulations of the present invention maybe used for both prophylactic and therapeutic purposes. Accordingly, the present invention provides for a method of treating a mammal susceptible to or suffering from an infectious disease or cancer, or allergy, or autoimmune disease. In a further aspect of the present invention there is provided a vaccine or adjuvant combination, comprising a saponin and CpG, as herein described for use as a medicament. Vaccine preparation is generally described in New Trends and Developments in Vaccines, edited by Voller et al., University Park Press, Baltimore, Md., U.S.A. 1978.

Detailed Description Text (46):
Furthermore, there is described a method of inducing a systemic antigen specific immune response in a mammal, comprising administering to a mucosal surface of said mammal a composition comprising an antigen and a haemolytic saponin. Further there is provided a method of manufacture of a vaccine or adjuvant are also provided, comprising taking a saponin and taking a CpG molecule and admixing them with an antigen.

Detailed Description Text (53):
CpG as well as QS21 improve significantly the intranasal boosting of systemic antibodies to Lipo-OspA. Moreover, when both adjuvants are combined, a synergistic effect on those responses is clearly demonstrated, especially in term of LA2 antibodies. Humoral responses elicited in the presence of QS21 and CpG are significantly higher than those induced by the parenteral booster. Taken together, these results show clearly the potential of intranasal formulations combining a lytic saponin and an immunostimulant.

Other Reference Publication (2):
Kensil et al., "Synergistic Action of QS-21 and CpG Adjuvants", X5 DNA Vaccines, Abstract No. 218, (1999).

Other Reference Publication (6):
Kensil, "Saponins as Vaccine Adjuvants", Critical Reviews in Therapeutic Drug Carrier Systems, 13(1&2), pp. 1-55 (1996).

Other Reference Publication (11):
Kensil et al., "Separation and Characterization of Saponins with adjuvant Activty etc.", Journal of Immunology, 146(2), pp. 431-437 (1991).

Other Reference Publication (12):
Chavali et al., "Adjuvant Effects of Orally Administered Saponins on Humoral etc.", Immunobiol., 174, pp. 347-359 (1987).

Other Reference Publication (16):
Brazolot-Millan et al., "CpG DNA can induce strong Th1 humoral and cell-mediated immune etc.", Proc. Natl. Acad. Sci. USA, 95, pp. 15553-15558 (1988).

Other Reference Publication (22):
So, et al., "Effect of a novel Saponin Adjuvant Derived from Quillaja saponaria on the Immune Response to Recombinant Hepatitis B Surface Antigen", Mol. Cells, 7(2) : 178-186 (1997).

Other Reference Publication (23):
Lipford, et al., "CpG-Containing Synthetic Oligonucleotides Promote B and Cytotoxic T Cell Responses to Protein Antigen: A New Class of Vaccine Adjuvants", Eur. J. Immunology, 27: 2340-2344 (1997).

Other Reference Publication (25):
Klinman, et al., "CpG Motifs as Immune Adjuvants", Vaccine, 17: 19-25 (1999).